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# THE DENTAL DIGEST

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# Raising the Bite with Immediate Dentures

JEROME M. SCHWEITZER, D.D.S. and DOROTHY A. SCHWEITZER, New York

SINCE THE PRACTICE of making immediate dentures has interested the profession of dentistry, the technique of making this type of restoration has undergone considerable refinement. Today, there are innumerable good methods by which one may obtain fine results. Pre-extraction records, such as roentgenograms, study models, condyle pictures, fues wire outlines, photographs, face masks, and tooth masks need no further explanation.

Little has been said about raising the bite in this procedure, although in almost every case in which an immediate denture is to be made, there is present a closure of the bite. The reason for this closure of the bite is as follows: As a rule, there are only six anterior maxillary teeth present which have had to tolerate for a long period of time the entire load of mastication. These teeth are, as a consequence, either protruded, separated, or mechanically abraded. This, except in rare instances, definitely results in a closed bite.

The closure of the bite varies as a rule, from 1 mm. to 7 mm. It is not wise, therefore, to follow all the original records taken before the extraction of the remaining teeth. There is an advantage, both from an esthetic and from a functional standpoint, to open the bite during the procedure of making an immediate denture.

## Reasons for Opening the Bite

1. A lower lingual bar that has been worn for a long time usually settles and presents a closure of the bite which needs correction when the occlusion is rebuilt.

2. Opening the bite where these closures are present restores a more normal facial expression.

3. When there is a decided overbite (Figs. 1 and 2), which is a great disadvantage in denture construction, opening the bite decreases this harmful condition.

4. Opening of the bite allows

greater stability for the upper dentures.

5. In cases in which a tip-to-tip closure is present (Figs. 3 and 4) with the usual mechanical abrasion, opening the bite makes it possible to use better looking anterior teeth, inasmuch as it provides more room than is otherwise possible.

6. Opening of the bite compensates for the otherwise quick settling which takes place in immediate dentures, owing to the rapid alveolar resorption following immediate insertion. This is more rapid during the first few months, particularly in cases in which the teeth have been lost as a result of periodontal disease. In these cases, ridge resorption continues at a greater rate than in normal cases.

## Technique

1. The lower teeth are first balanced to some harmonious occlusal arc, by means of an occlusal guide plate (Figs. 5 and 6). This guide plate is part of the circumference of a sphere, the diameter of which may be from 5 inches in narrow arches to 11 inches in extremely wide arches. These occlusal discs may be made or can be purchased at any supply house. The operator should try not to be arbitrary in balancing the lower teeth to a given curve, but make an attempt to establish an even occlusal curvature.

2. Place a small strip of modeling compound, about 1 inch long and a quarter of an inch wide, on the incisal edge of the lower incisor teeth.

3. Instruct the patient to close gradually, until that opening of the bite is reached which functionally and esthetically will fill the requirements of the case.

4. Chill the modeling compound stop.

5. Place two strips of soft yellow wax, thick enough to engage the bite, along the posterior ridges, one on each side, and with the hardened modeling compound stop in position on the lower incisor teeth, instruct the pa-

Fig. 1—Case requiring immediate denture. Great overbite, which would interfere with stability of full upper denture.

Fig. 2—Immediate denture has been placed in position. Bite has been raised, allowing for the same size teeth. Decrease in overbite will be noted.

Fig. 3—Case of a tip-to-tip bite needing an immediate denture. By raising bite, a small amount in this case, one is able to insert much better looking teeth, with the result shown in Fig. 4.

Fig. 4—Finished immediate denture. Bite has been raised about 3 mm.

Fig. 5—Lower teeth made to approximate a harmonious occlusal curvature.

Fig. 6—Lower teeth are balanced directly in mouth by means of a home-made occlusal template.

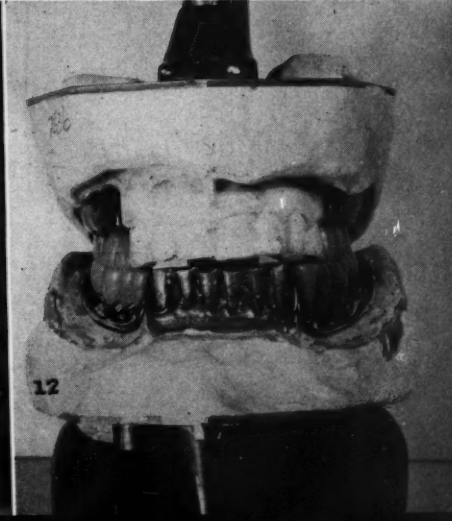
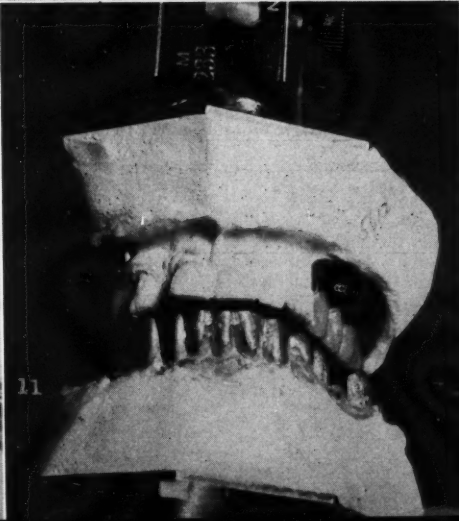
Fig. 7—Modeling compound of sectional impression of maxilla may be seen. Anterior portion has not yet been added. Amount to which bite has been raised is clearly indicated by thickness of compound between upper and lower anterior teeth.

Fig. 8—Method of transferring lower model to articulator. Instrument of transfer may be seen to the left. Modeling compound indexes for raising bite, which were taken directly in mouth, serve now as a means of mounting upper cast.

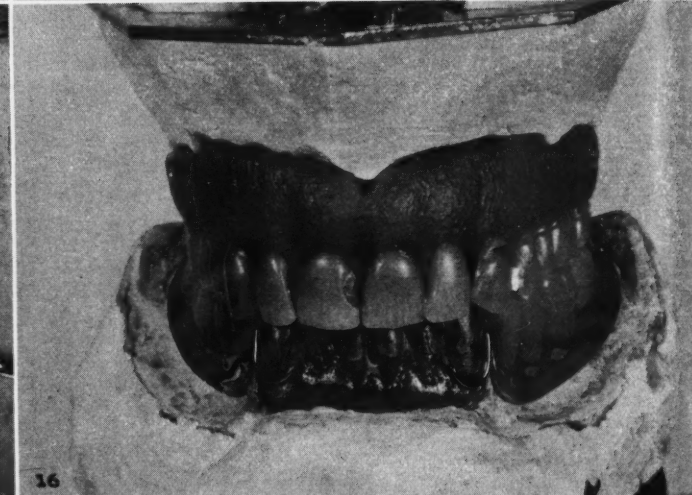
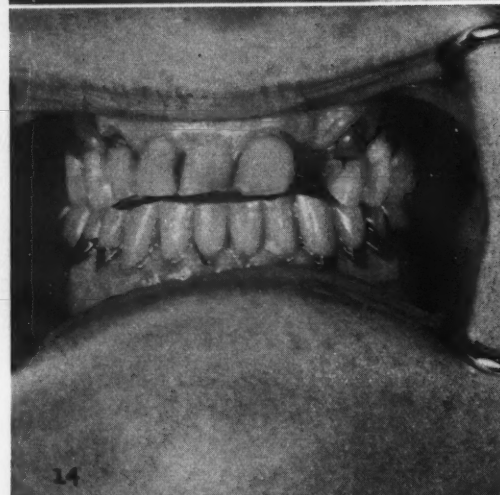
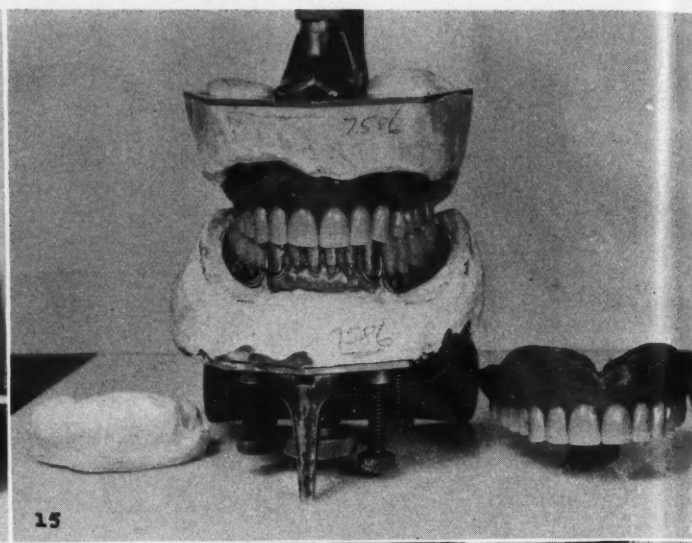
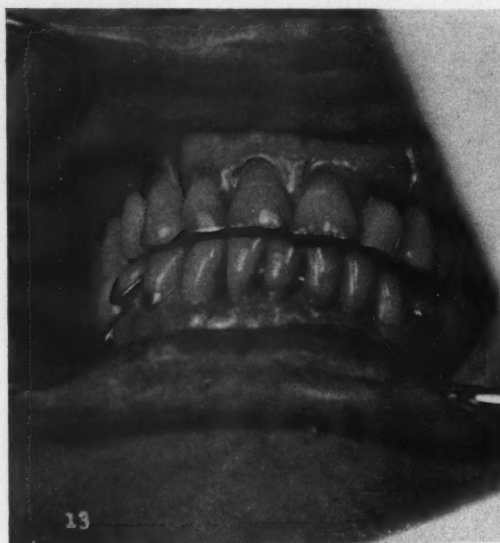
Fig. 9—Same as Fig. 8. Shows method of mounting upper model onto modeling compound indexes.

Fig. 10—Method of mounting sectional compound impression directly to lower model.

Figs. 11 and 12—Upper posterior teeth are set up on model. Amount of bite opening may readily be seen.







Figs. 13 and 14—Upper posterior teeth are tried in mouth. Degree of bite opening may now be seen by distance to which natural anterior teeth are separated.  
 Fig. 15—Anterior teeth are now set up; a duplicate set-up, explained in text, is shown on lower right hand side of illustration.  
 Fig. 16—Finished denture made in a pink base material. Gold inlays, porcelain restorations, erosions, and enamel checks can readily be seen.  
 Fig. 17—Completed denture together with celluloid matrix, described in text, immediately before extraction of upper teeth.  
 Fig. 18—Completed denture being tried directly in mouth, just before operating. Note staining.  
 Fig. 19—Too much bone was removed from portion of labial denture in this case. Heavy palatal tissue may be seen folding directly over what once was alveolar ridge. This is to be condemned.



tient to close until the modeling compound is engaged.

6. Chill the wax and place these three indexes aside for further use.

7. Take a modeling compound impression of the maxillae. This may be started with a Supplee number 5 tray, which has no buccal or labial rim. Modeling compound is better than plaster of Paris for this type of work, because it is easier to control. The compound impression, taken in sections, can be muscle-trimmed, post-dammed, and the hard areas relieved.

8. The sectional compound impression may be taken either by using the tray throughout the operation or the impression may be taken by removing the tray from the impression after the modeling compound has been introduced in the mouth. In the latter case the impression is taken, from that point on, by the closed mouth method.

9. If the impression is taken by removing the tray, the bite is raised by adding modeling compound to the surface of the ridges which engage the lower teeth (Fig. 7). In this way, the amount of opening that is necessary to fulfill the esthetic and functional requirements may be determined before the anterior section of modeling compound or plaster-of-Paris is added.

10. The final step in the sectional compound impression, is a plaster wash, taken directly in the sectional impression. It is often advisable to have the anterior section made entirely of plaster. The opening of the bite is easy to observe before the anterior section is added.

11. Take an impression of the lower teeth, either in plaster-of-Paris or in an elastic impression material.

12. Transfer the lower model to the articulator. Attempt to adjust the lower model correctly on the instrument, in the same relative position occupied by the teeth in relation to the condyles and occlusal plane in the mouth (Fig. 8).

13. If the impression has been taken by the first method in step 8, then the upper impression is poured in stone and articulated with the lower model by means of the modeling compound stop and the two posterior wax bites that were previously taken (Fig. 9). If the impression has been taken

by the second method in step 8, the upper model may be mounted directly to the lower model before the modeling compound has been removed (Fig. 10). The bite will then be opened on the instrument the same distance that it was opened in the mouth.

14. The upper posterior teeth are set up (Figs. 11 and 12) and tried in the mouth. They will naturally drop down below the occlusal plane of the anterior teeth by the amount of the bite opening (Figs. 13 and 14). Two sets of upper teeth are always prepared for try-in. One set is used, the other is put away for future use.

15. The lingual matrix is now made. The anterior stone teeth are removed from the upper model by means of a jeweler's saw, coarse stones and sandpaper discs.

16. The full upper set-up is completed at the new bite height (Fig. 15). I believe it is a mistake to remove too much stone in setting up the anterior teeth. Only that amount of stone which is absolutely necessary for grinding-in the anterior teeth should be removed.

17. The upper set-ups are now ready for staining. Porcelain restorations are baked-in where necessary, and gold inlays are placed in position. Gold looks well when placed as a mesio-occlusal inlay in the upper first bicuspid, as a mesial restoration in either cuspid, or as an incisal corner in either central. The surfaces of the teeth are ground to reproduce all the slight eccentricities that the natural teeth possessed. Nicotine and enamel checks, erosions, and discolorations are added where needed. The teeth are baked, well glazed and finally polished with pumice and a rubber wheel to give them the sheen that natural teeth have.

18. A duplicate model is made of the upper, on which a celluloid matrix is constructed. This will be used in the surgical procedure.

19. The denture is now finished in vulcanite or one of the newer pink bases (Figs. 16, 17 and 18). The teeth are tin-foiled to prevent the finer stains from being rubbed out by excessive polishing.

20. The upper teeth are extracted, the necessary surgery is performed, and the denture immediately inserted.

## Surgery

It is a grave mistake to remove too much bone from the labial plate, and from the region of the cuspids. The bone should not be trimmed excessively except in extreme cases of protrusion. If the labial plate is over-trimmed, no ridge will be left when shrinkage takes place. The labial plate will be restored right to the palate (Fig. 19).

The sockets of the extracted teeth must be permitted to fill in with new bone. It is usually several months before normal resorption takes place. Even if the labial aspect of the finished denture extends far out at the start, as normal bone absorption takes place, the over-extended labial denture shrinks back, and the relined denture may be further brought in labially. Excessive trimming at the start destroys an otherwise normal ridge, which can never be replaced.

After the upper teeth have been extracted, suturing is advisable. The operator must be careful, however, not to pull the lips of the wound together too tightly, but merely to tack them together lightly. This permits normal blood clotting, and the subsequent formation of new tissue (Figs. 20, 21 and 22). Tight suturing often pulls the lip downward.<sup>1</sup>

## Follow-Up Treatment

After the extractions, a great deal of bone absorption takes place in the anterior region, usually within two to four weeks. When this shrinkage is noticeable, the inside of the upper denture is dried, and some zinc oxide corrective paste is flowed in the anterior region, to contact that area in which the absorption has taken place. Hot modeling compound may be used instead of the paste. The denture is placed back in the mouth, and the patient instructed to close. The teeth are kept in contact until the paste has hardened. Modeling compound, of course, may be chilled immediately. While doing this, one should be sure the denture does not slip downward and forward. When, the paste has hardened, the denture is removed and trimmed (Figs. 23 and 24). This procedure is resorted to continually dur-

<sup>1</sup>Schweitzer, J. M.: Immediate Denture Service, D. Cosmos, 78:933 (September) 1936.

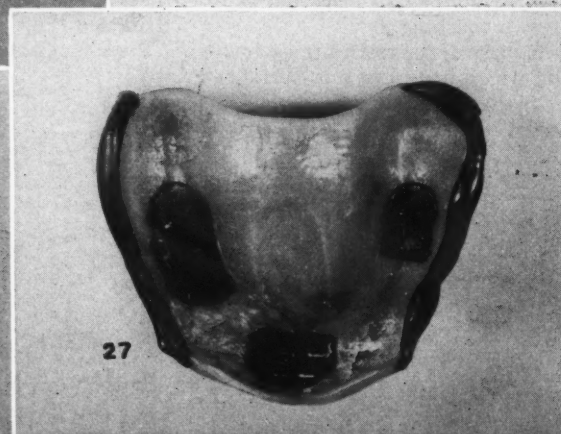
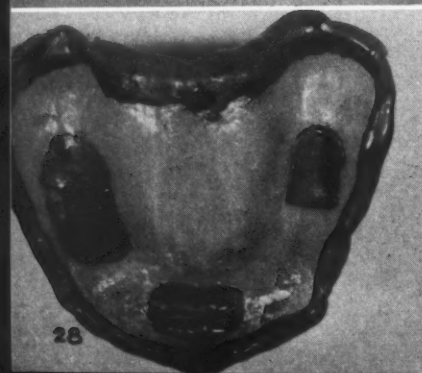
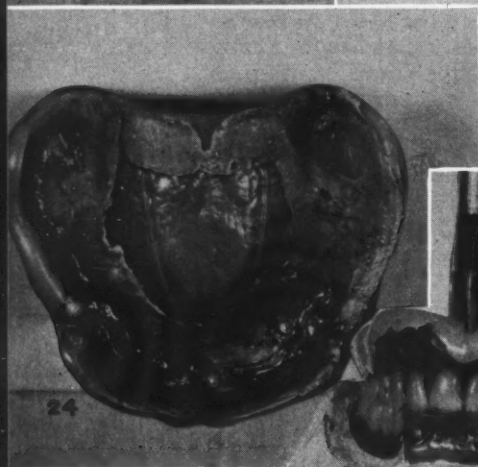
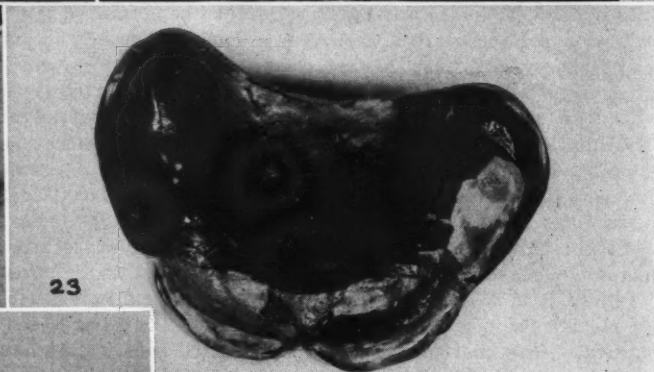
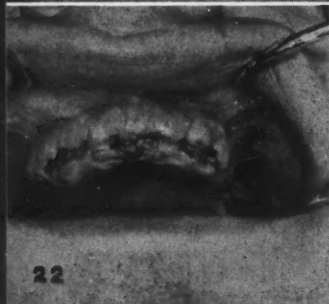
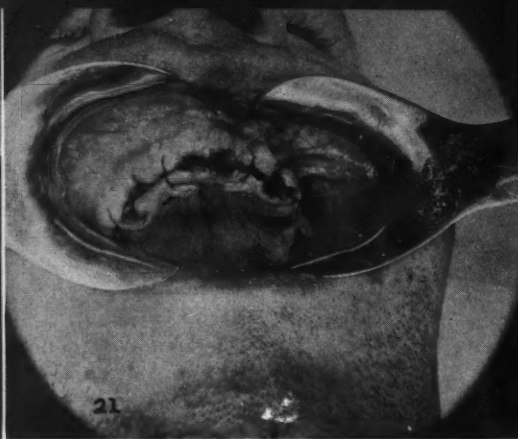


Fig. 20—In this case are seen the sockets immediately after extractions, the bone having been trimmed.

Fig. 21—This is the same case as Fig. 20. Sutures may be seen in position, lightly tacking loose ends of tissue together.

Fig. 22—Same condition as Fig. 20, three days later. This is correct procedure in immediate denture, for a healthy ridge is left when the tissue heals.

Fig. 23—Modeling compound added to anterior and left palatal portion of an immediate denture, to help fill in while the tissue is being rapidly resorbed.

Fig. 24—Same as Fig. 23, except that the paste has been added around the entire periphery of an immediate denture.

Fig. 25—Paste wash being used directly on second upper try-in, as described in text.

Fig. 26—First step in rebasing.

Fig. 27—Second step in rebasing.

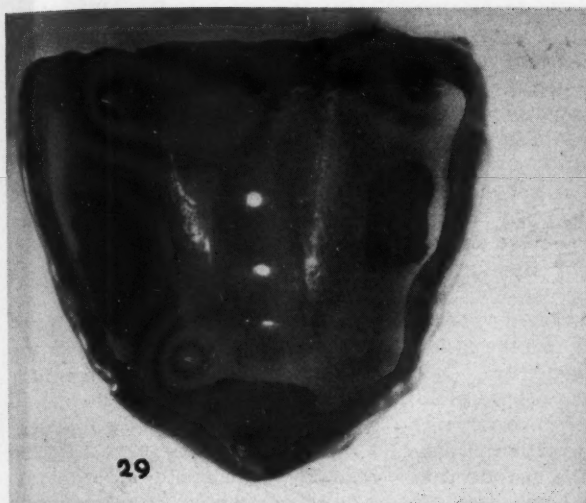
Fig. 28—Third step in rebasing.

ing the first two months, because, by building up the inside of the denture after bone resorption has taken place, the tissue does not assume that flabby appearance that it does assume when spaces are permitted to remain between the tissue and the denture. This method is followed in posterior cases in which recent extractions have caused bone resorption to take place.

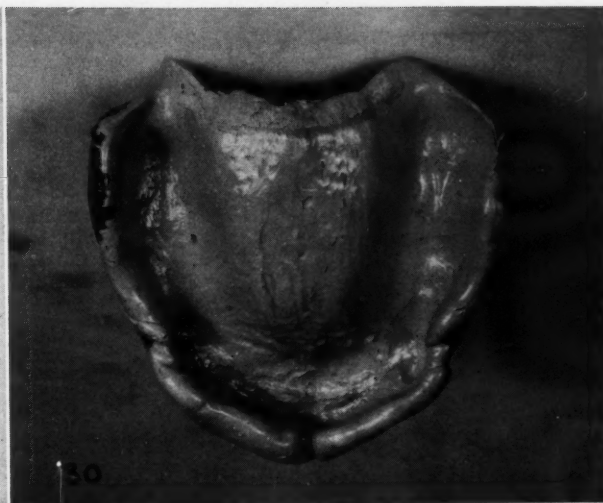
When the operator feels that sufficient time has elapsed for the major part of the bone resorption to take place, he may resort to rebasing the case. This rebasing may be done anywhere from one to eight months after the original extractions, depending on the case at hand, and the operator's experience and judgment.

The reason for making the second upper set-up previously described, now becomes apparent. A patient often wishes an extra set of dentures. It therefore becomes practicable to finish the second denture before rebasing the original denture, so that at no time does the patient have to go about without teeth. The second set-up, which has a hard wax model-





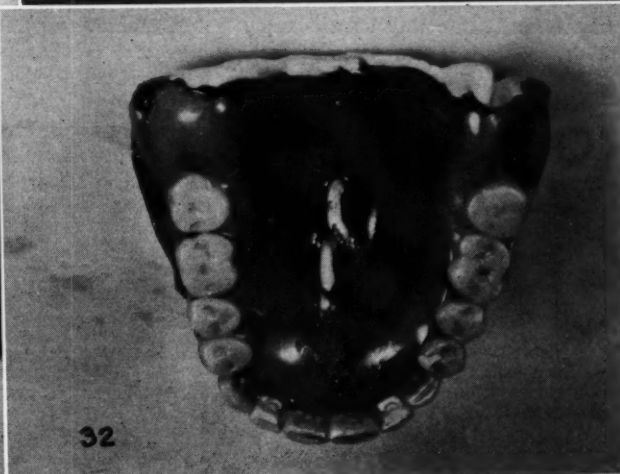
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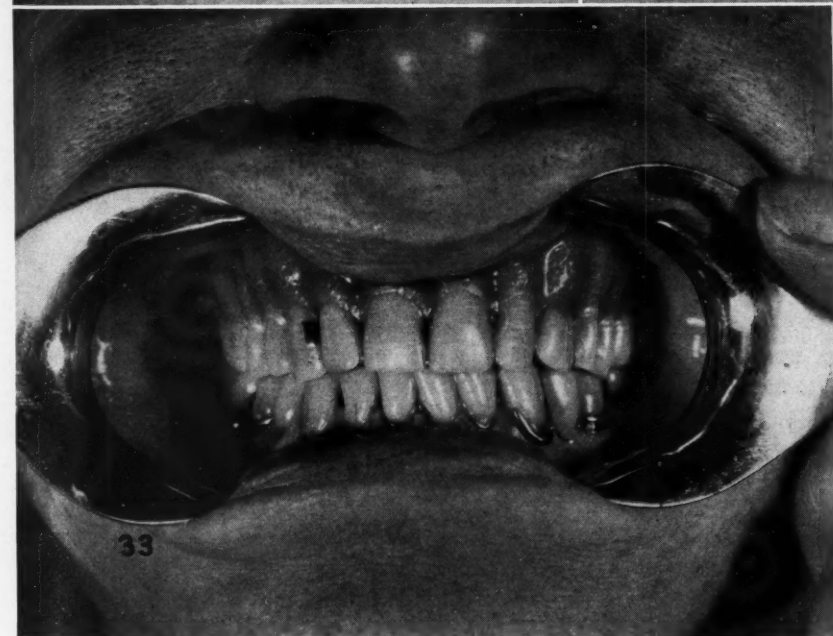
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33

Fig. 29—Fourth step in rebasing. Palatal perforations may readily be seen, which were made with a round bur.

Fig. 30—Next step in rebasing. A paste wash taken directly inside denture.

Fig. 31—Rebasings continued. Same as Fig. 30, but another case.

Fig. 32—Palatal view showing how paste runs through the holes.

Fig. 33—Completed immediate denture.



ing compound base, with lengths of wire for additional strength, is now tried in the mouth. The advantage of having the second set-up is that it affords the operator a simple way of obtaining the centric registration. With no upper teeth in position to guide the mandible, this would be a difficult procedure. The new set-up is muscle-trimmed. The height of the bite and the esthetics should be checked. The palatal portion of the denture is now perforated with two or three holes over the hard areas, and a wash is placed directly in the upper try-in (Fig. 25). The impression is taken under biting stress. The new case is completed in vulcanite or one of the pink base materials. If a lower lingual bar has been made, it is treated in exactly the same way as the upper denture.

#### Rebasing Original Denture

The rebasing of the original denture may now be done. In rebasing the old denture, the bite must often be raised because of a great deal of settling.

1. The inside of the denture is thoroughly dried.

2. The undercut beneath the lip is cut away from the denture. If this were not done, it would prevent the denture from going into its farthest posterior position.

3. About an inch of hot modeling compound is added in the bicuspid and first molar ridge areas on both sides, as well as in the anterior (Fig. 26).

4. The denture is inserted while the compound is still soft, and the patient is instructed to close gently.

5. An upward, backward pressure is exerted in the anterior region with the fingers, while the patient is closing. This prevents the denture from slipping forward.

6. When the height to which the bite is to be raised is obtained, the denture is muscle-trimmed, starting at the right heel and going around the entire periphery with hot modeling compound tracing sticks in the following manner:

(a) the right heel from the tuberosity to the right cuspid;

(b) the left heel from the tuberosity to the left cuspid (Fig. 27);

(c) the right cuspid to the median line;

(d) the left cuspid to the median line;

(e) the posterior palatal area which includes the post-dam (Fig. 28).

7. When the entire periphery has been muscle-trimmed and the denture post-dammed, the areas to be relieved are marked directly upon the palate with indelible pencil, which will later show on the wash.

8. The palatal portion is now perforated over the areas that are to be relieved with a round bur (Fig. 29).

9. An impression is taken inside the denture, paste being used as a wash. The impression is taken under biting pressure (Figs. 30, 31, and 32).

10. The new denture is then finished in a pink base material from a model made from this impression (Fig. 33).

730 Fifth Avenue.

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## EXAMINATION FOR APPOINTMENT IN THE DENTAL CORPS OF THE NAVY

A competitive examination to select not more than twenty for appointment in the Dental Corps of the Navy will be held on July 5, 1938, at the Naval Medical School, Washington, D. C., Naval Training Station, Great Lakes, Ill., and Naval Training Station, San Diego, Calif.

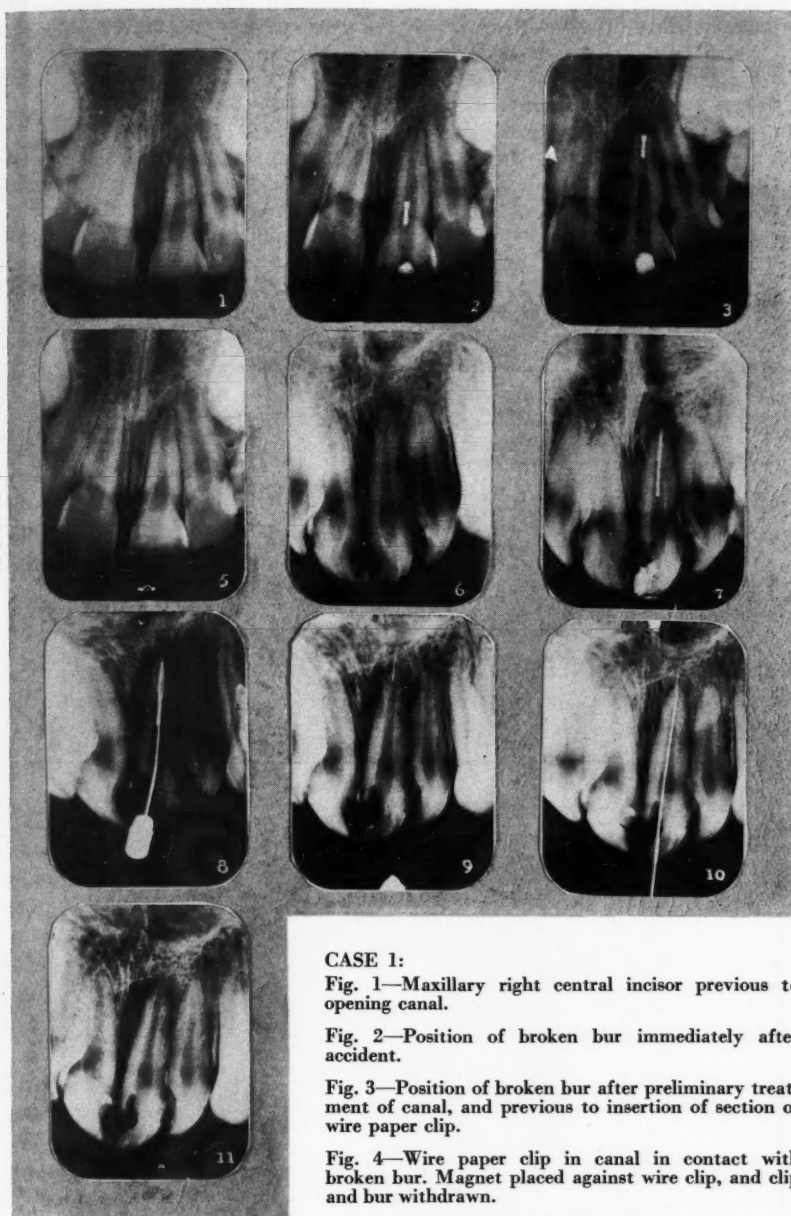
A candidate for appointment in the Dental Corps must be a citizen of the United States, and must be between 21 and 32 years of age at the time of appointment, a graduate of a standard dental college, of good moral character, and of unquestionable professional repute.

Credentials relative to character, citizenship, date of birth, and education must be submitted and approved before an applicant can be authorized to appear for examination.

A circular which contains full information relative to the Dental Corps and describes the method of making application for appointment, may be obtained from the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

# Broken Instruments in Root Canals

RALPH W. EDWARDS, B.S., D.D.S. and CARL W. SAWYER, D.D.S., Kansas City, Missouri



## CASE 1:

Fig. 1—Maxillary right central incisor previous to opening canal.

Fig. 2—Position of broken bur immediately after accident.

Fig. 3—Position of broken bur after preliminary treatment of canal, and previous to insertion of section of wire paper clip.

Fig. 4—Wire paper clip in canal in contact with broken bur. Magnet placed against wire clip, and clip and bur withdrawn.

Fig. 5—After removal of broken bur.

## CASE 2:

Fig. 6—Maxillary right central incisor previous to opening the canal.

Fig. 7—Broken reamer in canal. Broach fragment medial to reamer.

Fig. 8—Reamer passed distal to broken instrument.

Fig. 9—After removal of reamer. Broach fragment forced beyond apical foramen.

Fig. 10—Barbed broach in canal in contact with fragment.

Fig. 11—After removal of broken broach.



Fig. 4

**BROKEN INSTRUMENTS** in root canals present many perplexing problems. The removal of these fragments often taxes one's ingenuity. The following cases are typical of some of the difficulties that are encountered.

**CASE 1—History**—R. J. E., a boy, aged 8 years and 7 months sustained an accident eight months previous to examination which resulted in the fracture of the maxillary right central incisor (Fig. 1).

**Accident During Treatment**—With the death of the pulp an attempt was made to open the tooth with a bur. At the instant the bur entered the canal, a sudden jerk of the patient's head broke the instrument, the bur remaining in the canal (Fig. 2).

**Attempted Removal of Broken Instrument**—Bibulous paper points were used to absorb the contents of the putrescent canal. When painful symptoms had subsided so that instrumentation was possible, the bur head was located in the apical third of the canal (Fig. 3). Attempts to dislodge the bur head with barbed broaches were unsuccessful.

**Successful Removal of Broken Instrument**—Finally, the plan was evolved of using a magnet to withdraw the broken instrument:

1. The magnet used was U-shaped, 5.5 inches long, and capable of sustaining a weight of 1,250 Gm. (ap-

proximately 2.75 pounds) from the free pole.

2. A section of an ordinary wire paper clip was used as the medium of contact between the broken bur and the magnet.

3. The clip was placed in the canal in contact with the bur, the curved end of the clip resting against the fractured incisal edge of the tooth.

4. The magnet was placed against the wire (Fig. 4), and the bur head easily withdrawn (Fig. 5).

The patient recovered without complications.

**CASE 2—History**—E. S., a girl, aged 14 years, had extensive caries which was responsible for the death of the pulp in the maxillary right central incisor (Fig. 6).

**Accident**—Unfortunately, a reamer used to enlarge the canal was broken, and efforts to withdraw the broken reamer with a barbed broach resulted in the added complication of fracturing the broach (Fig. 7).

**Removal of Broken Reamer**—By careful manipulation, it was possible to pass a number 1 Kerr reamer between the wall of the canal and the broken instruments (Fig. 8), and by rotary movement engage and remove the broken reamer. This procedure, however, brought additional complications in that the broken broach was forced beyond the apical foramen, slightly less than 2 mm. being left within the canal (Fig. 9).

**Removal of Broach Fragment**—To remove this broach fragment a

barbed broach was used with a few fibers of cotton entwined on the end, inserted in the canal (Fig. 10), and rotated slightly to entangle the fragment. The broken broach was thus withdrawn (Fig. 11).

The patient recovered without complications.

#### Comment

Because of the fragile nature of the instruments employed in root canal therapy, extreme caution must be observed in their manipulation. The foregoing cases are striking examples of the misfortunes that can arise incident to the use of reamers, files, and broaches.

*Tenth Street and Troost Avenue.*

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## Death from Pimple Infection: Report of Case

JOSEPH E. SCHAEFER, D.D.S., M.D., Chicago

A BOY DIED at the Cook County hospital as a result of a severe infection. The infection started in a pimple on the lower lip which he had picked.

**History**—The patient presented with a swelling of the lower lip which gradually became more pronounced, and progressed to a cavernous sinus thrombosis with meningitis. The patient became comatose before he died with a toxic psychosis, evidenced by irrational utterances. This was probably due to the developing meningitis. The diagnosis, however, was not verified by postmortem examination.

#### Comments

Micro-organisms have the power to destroy life quickly and completely. Only biologic mechanisms, if active enough, may stop the process; surgery has little to offer if the biologic defensive mechanisms are not capable of checking the process.

*55 East Washington Street.*





# The Editor's Page

IN ALMOST EVERY editorial office the yawning wastebasket is prepared to accept the contributions of anonymous correspondents. Occasionally, however, an unsigned letter comes to the attention of an editor which does bear consideration. Presented herewith, verbatim, is such a letter:

Dear Sir:

I am a woman of 36, and while I easily pass for 30, you see I am no young person. I have been so unfortunate as to have to go through life with what is frankly known as "buck teeth" which has caused me to have a terrible inferiority complex. In fact, I am even ashamed to go to a dentist, and I believe it was my parents' knowledge of my shame of my teeth that caused them to never broach the subject of having them fixed. Although at the age of 9 they did take me to an orthodontist, he said to bring me back when I was 12. Nothing was ever mentioned of this subject again, although I remember clearly that embarrassing first visit.

Anyway I have gone through the years, never a day passing without feeling terribly handicapped, although I have been fortunate in having many friends and always seem to be well liked by both men and women in my contacts both socially and through business. But no one will ever know the many tears I have shed over this handicap, and the times I have considered committing suicide.

While I have always seemed popular with men, still I have never had opportunities to marry young men, only the older ones getting serious. This I feel sure is due to my teeth, for I know I also would not marry any man with "buck teeth."

At my age is there any chance of having my teeth straightened? They protrude quite a bit, my chin as a result recedes, and I cannot shut my mouth as in that position my lower lip protrudes and my chin wrinkles due to this position. I suppose you have me pictured as an awful sight, whereas in spite of this mouth, I seem to look quite "passable" when I do not try to shut my mouth, as God has given me decent hair and other features, including a clear skin. I would "mortgage my life" literally to have that part of me remade, so from my description do you think there is any hope?

"An Ugly Duckling"

A mingling of emotions is probably experienced by everyone who has read this sorrowful letter. This woman is suffering from a neurosis just as real as any of which the mind is capable. Her feelings of frustration and inferiority

could have been prevented. Some dentist, somewhere along the line, could have corrected the malocclusion if in his approach he had allayed embarrassment and inculcated the recognition, by both parents and child, that the correction was imperative from a social as well as a physical point of view. In so doing, he could have prevented a mind from retreating into itself. The involuntal consequences of physical disfigurement are responsible for many of the social maladjustments encountered. The dentist must be concerned with the prevention of mental aberrations as well as physical disease or deformities.

The profession of dentistry may well be proud of orthodontic science and art. Orthodontists, however, have not gone far enough in making their services available. Orthodontia is associated with cities, and, in the minds of many people, with luxury. There are, fortunately, signs to indicate a decentralization. There are young men, well trained in the specialty of orthodontia, who are migrating into the smaller communities. This migration should be encouraged. What about the many areas, however, that are not now served by skillful orthodontists? The general practitioner is discouraged to use ready-made appliances because of their possible disastrous effects. Many general practitioners do not feel competent to plan treatment or make their own appliances. To whom shall they turn?

In an ideal society, space and time and money would mean nothing, and children needing care could be referred to orthodontists; but in the practical world, space and time and money do mean something, and children in rural or small communities cannot receive the specialized services that they require. Something must be done for them to keep them from growing into "ugly ducklings." Might not some orthodontic societies organize a treatment-planning and consulting service to aid the general practitioner in approaching the orthodontic patients that he meets? All treatment by remote control, to be sure, is dangerous. But it does seem that a treatment-planning and consultant service under competent orthodontists would be more to the point than the lack of treatment or the kind of treatment that children in small communities now receive.

# A Long Distance and Low Penetration Technique for Dental X-Ray Units

LEONARD FRANK, San Francisco

IN ROENTGENOLOGY THE progressive dentist is always striving for a way to eliminate anatomic distortion, to get sharper detail, and to add greater brilliancy to his roentgenograms. The technique to be described is an attempt to make this possible. The technique is not new; it has been in use for a number of years in some of the dental laboratories, but has never before been applied to dental x-ray units. It has been used only in conjunction with the larger machines because of their greater capacity and flexibility. Because the technique is based primarily on the fundamental principle of distance, it has been called the "long distance technique," which is recognized as being superior to the technique now in use with dental x-ray units.

The name "distance technique" is somewhat misleading. It would be better to call it the "long distance and low penetration technique," as this article has been entitled. The long distance reduces the anatomic distortion and magnification and sharpens the detail whereas the low penetration increases the brilliancy of the black and white contrast demanded by eminent diagnosticians. To appreciate this statement, all factors involved should be thoroughly studied and understood, for good results require knowing the fundamentals and understanding the reasons for using them. Before these fundamentals are discussed, it may be well to emphasize that no matter how perfect the operating room technique may be, all effort can be completely nullified by poor dark room technique.

## Dark Room Technique

Dark room technique has been discussed many times at great length. It may be repeated, however, that a standardized dark room technique should be employed. A definite time



Fig. 1—Maximum focal spot-to-film distance obtained by having the patient in a reclining position.

and temperature development should be used without deviation. At all times the same length of time should be used to develop films and this should be done at the same temperature. It is the only way that one can be assured of stable results. All films can be under-developed and most films can be over-developed. It is almost impossible to pick the perfect exposure time; therefore, standardized dark room technique is mandatory.

### Operating Room Fundamentals

The four fundamental operating room factors are: (1) K. V. P. (penetration); (2) distance; (3) milliamperes; and (4) time of exposure. These four control four other factors: (1) distortion and magnification; (2) density; (3) detail, and (4) contrast.

### Definitions

1. *K. V. P. (Penetration)*—K. V. P. means the number of volts supplied to the tube. It controls the contrast in the film. As the K. V. P. is increased and the milliamperage proportionately decreased, all other factors remaining the same, the contrast is decreased. When the K. V. P. is decreased and the milliamperage proportionately increased, all other factors remaining the same, the contrast is increased.

All other factors remaining the same, when the K. V. P. is increased the milliamperage must be decreased, and when the K. V. P. is decreased the milliamperage must be increased.

2. *Distance*—Distance means the distance in inches between the focal spot of the tube and the film resting behind the object of which a roentgenogram is to be taken. It controls distortion and magnification and increases detail. Reducing the focal spot-to-film distance increases distortion and magnification, and reduces detail. Increasing the focal spot-to-film distance reduces distortion and magnification, and increases detail.

3. *Milliamperes*—"Milliamperes" refers to the number of milliamperes used during the exposure. To some extent it controls the density of the film.

4. *Time*—Time or time of exposure is the number of milliamperes seconds required to make an exposure. This is computed by multiplying the num-

ber of seconds of exposure by the number of milliamperes the tube is using. For example, if one is using 10 milliamperes through the tube and a five-second exposure the milliamperes seconds of exposure would be 10 milliamperes times 5 seconds or 50 milliamperes seconds. To a great extent, time controls density.

5. *Contrast*—Contrast denotes the extreme tones of blacks and whites of the part as portrayed on the film. Contrast is controlled by the K. V. P. or penetration. The higher the K. V. P., the less the contrast; and the lower the K. V. P., the greater the contrast.

Contrast should not be confused

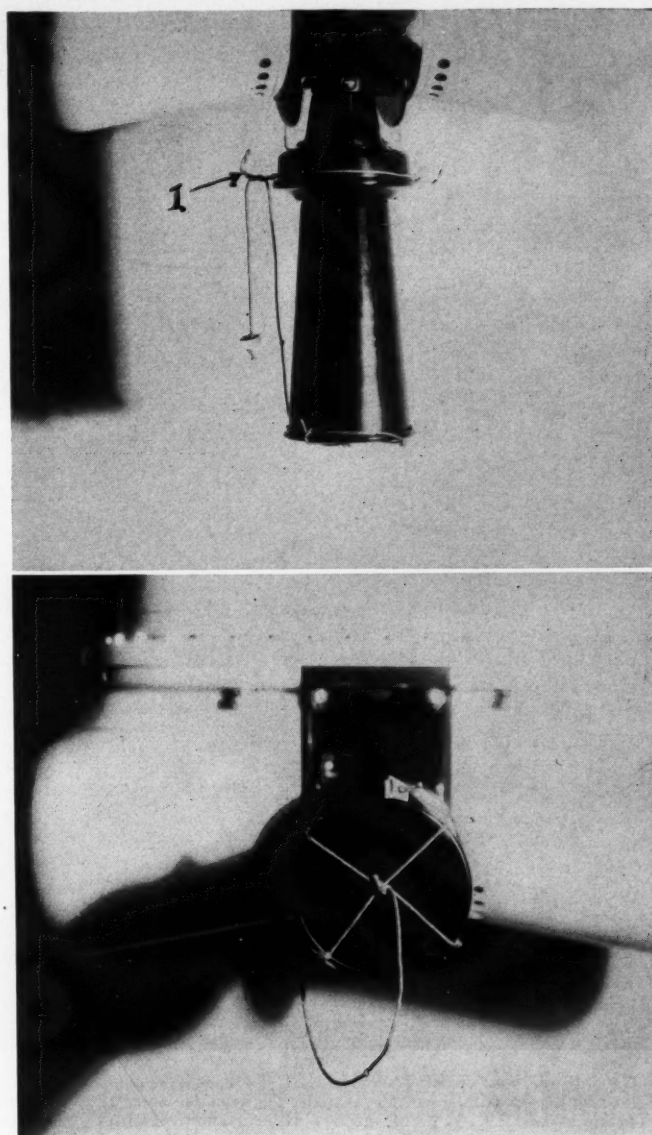


Fig. 2 (top)—The type of cone shown here is more desirable than the pointed type as it makes it easier to get the film-cone relationship. A piece of flexible wire has been drawn around the top of the cone and bent into hooks on each side, so that the cord can be hung out of the way during exposure.

Fig. 3 (bottom)—Method of attaching cord to cone.





Fig. 4—Full mouth roentgenogram. Technical factors: Film: Agfa, non-screen. Distance: 25 inches. Milliamperes: 10. Time of exposure: Molars, 3 seconds; bicuspsids,  $2\frac{1}{2}$  seconds; cuspsids,  $2\frac{1}{4}$  seconds; lateral,  $2\frac{1}{2}$  seconds; central,  $2\frac{1}{2}$  seconds. (Exposure time is the same for the mandible and maxilla.) K. V. P.: 55. Time of development: 4 minutes. (Films were cut down after drying.)

with density. Contrast is the range of black to white of the part roentgenographed as depicted on the film. A film can have perfect contrast and, nevertheless, by over-development or under-development, or over-exposure or under-exposure, the density can be changed to a light or dark film.

6. *Detail*—Detail is the sharpness with which the cancellous structure of the bone, the outlines of the teeth, restorations, and the soft tissues are shown. Detail is controlled by distance. The longer the focal spot-to-

film distance, the sharper the detail, and the shorter the focal spot-to-film distance, the less sharp the detail.

7. *Density*—Density is the difference between a lighter or darker film. Density is controlled by distance, time of exposure, and milliamperes. The greater the time of exposure, all other factors remaining the same, the greater the density. The less the time of exposure, all other factors remaining the same, the less the density.

The greater the distance, all other factors remaining the same, the less

the density. The less the distance, all other factors remaining the same, the greater the density.

The greater the milliamperage, all other factors remaining the same, the greater the density. The less the milliamperage, all other factors remaining the same, the less the density.

8. *Distortion and Magnification*—Distortion and magnification are controlled by distance.

The greater the focal spot-to-film distance, all other factors remaining the same, the less the distortion and

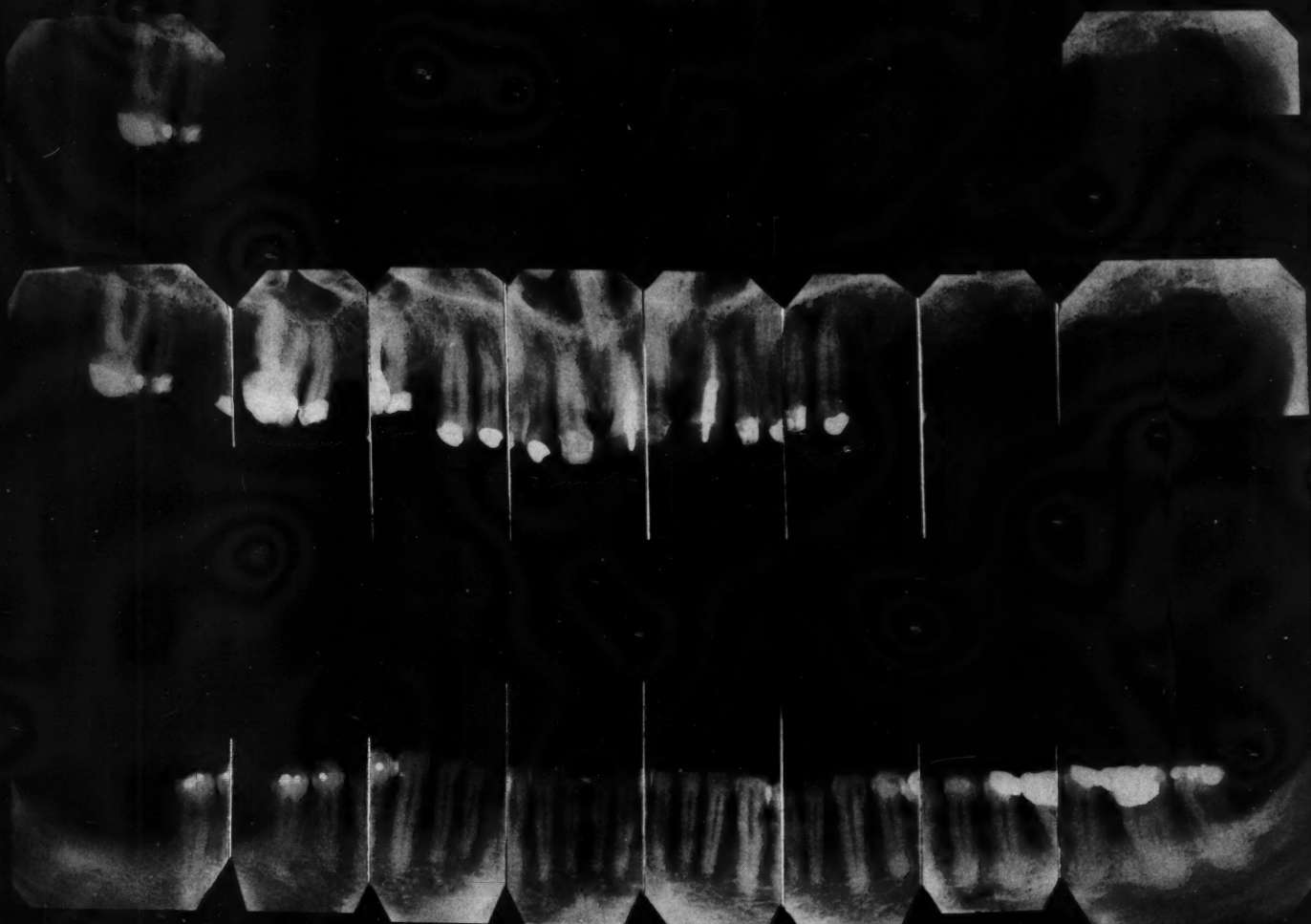


Fig. 5—Full mouth roentgenogram. Technical factors: Film: Bolin, lightning speed. Distance: 25 inches. Milliamperes: 10. K. V. P.: 55. Time of exposure: Molars,  $3\frac{1}{2}$  seconds; bicuspids, 3 seconds; cuspids,  $2\frac{3}{4}$  seconds; lateral, 3 seconds; central, 3 seconds. (Exposure time is the same for the maxilla and mandible.) Time of development: 5 minutes. (The films in this set were cut down after drying.)

magnification. The less the focal spot-to-film distance, all other factors remaining the same, the greater the distortion and magnification.

The greater the object-to-film distance, the greater the magnification. The less the object-to-film distance, the less the magnification.

By a careful study of these short definitions, it can readily be understood how all factors interlock and only by careful balancing of each factor with the others can a perfect technique be attained. The definitions

explain that only by long distance and low penetration, assuming correct angulation, can an approach be made to correct anatomic roentgenograms with brilliant contrast. It is impossible to attain an anatomically perfect roentgenogram but with long distance and low penetration, distortion and magnification are reduced to a minimum, and detail and contrast increased to a maximum. The attaining of these qualities should be justification enough for using a long distance and low penetration.

In these definitions is found the reason for the suggested change from "long distance technique" to "long distance and low penetration technique." Distance adds nothing to contrast. It reduces distortion and magnification and increases detail. The low penetration (K. V. P.) increases the contrast. To make plainly visible all the pathologic changes in the roentgenograms there must be sharply defined brilliant contrast. The ideal K. V. P. is 42. It is not possible to get that low on a dental x-ray



Fig. 6—Lateral jaw roentgenogram. Technical factors: Film: Agfa non-screen. Distance: 15 inches. Milliampères: 10. Time of exposure: 8 seconds. K. V. P.: 55. Time of development: 8 minutes.

unit but a representative of the company that installed any particular unit can lower it to about 55 K. V. P. After the K. V. P. has been lowered the voltmeter should read 95. This drop of 10 K. V. P. will make a radical change in the contrast of the roentgenogram. The dentist should not attempt to make the change himself. Only a representative of the x-ray unit in use should make the change. One should be sure that the milliampereage is kept at 10 after the change to 55 K. V. P. is made. Milliampereage contributes nothing to contrast but it does keep the operator from having to prolong the exposure.

In order to get the maximum focal spot-to-film distance, it is impera-

tive that the patient be in a reclining position (Fig. 1). The chair should be tilted back as far as it will go, and as a further aid to getting distance, if possible, the pole that supports the tube should be changed. These poles come in two lengths, normal and extra long. The extra long pole will give an added 4 inches in height.

A 36 inch film-to-focal-spot distance is advocated<sup>1</sup> and should be used if possible; but owing to the extremely fine focal spots of the tubes supplied with the dental x-ray units a distance of 25 inches or more will give the desired results.

<sup>1</sup>Franklin W. McCormack of San Francisco should be credited for the 36 inch distance technique.

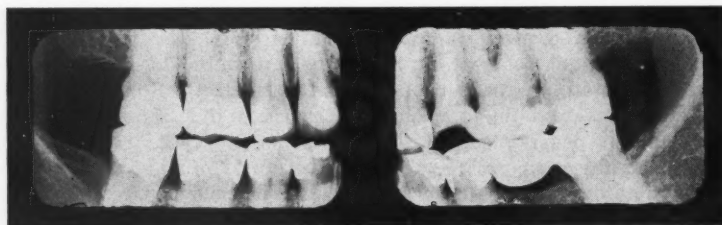


Fig. 7—Bite wing roentgenograms. Technical factors: Distance: 11 inches. Milliampères: 10. Time of exposure: 10 seconds. K. V. P.: 55. Time of development: 7 minutes. Owing to lowering of K. V. P., it is necessary to increase exposure time for bite wings.

## How to Measure Distance of Exposure

A piece of cord is tied to the cone (Fig. 2) and 25 inches are carefully measured (or whatever distance is to be used). On the free end of the cord a little ball is attached. One can easily be made from a small piece of impression compound. This cord is kept tied to the cone at all times. The distance of every exposure made is measured. The operator should not try to guess the distance but should be sure of it.

## Choice of Film

The film now manufactured for dental use, with the exception of one, cannot be used with low penetration and long distance. The exposure time would be too long. The exposure time would be far beyond the margin of safety. One should not attempt to use these films, therefore, with a low penetration and long distance technique. Although the films are ideal for a dental x-ray unit with high penetration and short distance, they are far too slow for use with a long distance and low penetration. It is necessary to use a film of much greater speed.

As far as I know there are at present only two choices, either to use the Bolin lightning speed film or to make one's own film. It is not difficult to make a film and there is the advantage of procuring any size film desired. If the dentist is too busy to make his own films the Bolin lightning film is satisfactory, but one should be sure that it is the "lightning" speed. The company makes other speeds of film but only the lightning speed can be used with the long distance and low penetration technique.

## How to Make a Film

A 12 inch cardboard trimmer is needed to cut the large films into convenient strips. The most useful sizes are 1½ by 1½; 2 by ¾, and 1½ by ¾. Other sizes may be required, however. It will be necessary to have a separate die made for each size film. Any die maker can make them. They cost about twenty dollars a piece. Black light proof paper and a 30 pound white paraffin paper in which to wrap the films are necessary.

Agfa non-screen film (the one that  
(Continued on page 121)



# An Accurate Impression Technique For Immediate Restorations

STERLING T. BOWEN, D. D. S., Los Angeles

**IMMEDIATE RESTORATION** with full dentures is rapidly being recognized as the best way in most cases of accomplishing the change from natural to artificial teeth. Advantages of immediate restorations are briefly these: (1) Records of the teeth and bite relations may be established

prior to extraction and transferred to the denture; (2) correct facial dimensions and intermaxillary space are maintained; (3) a good ridge is the usual result, and (4) the patient becomes accustomed to the dentures more quickly if he does not go through a completely edentulous period.

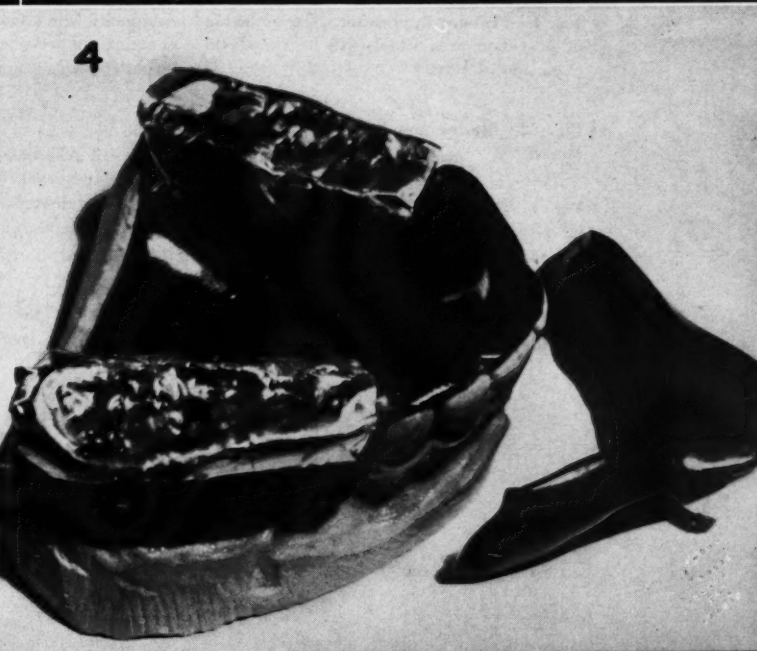
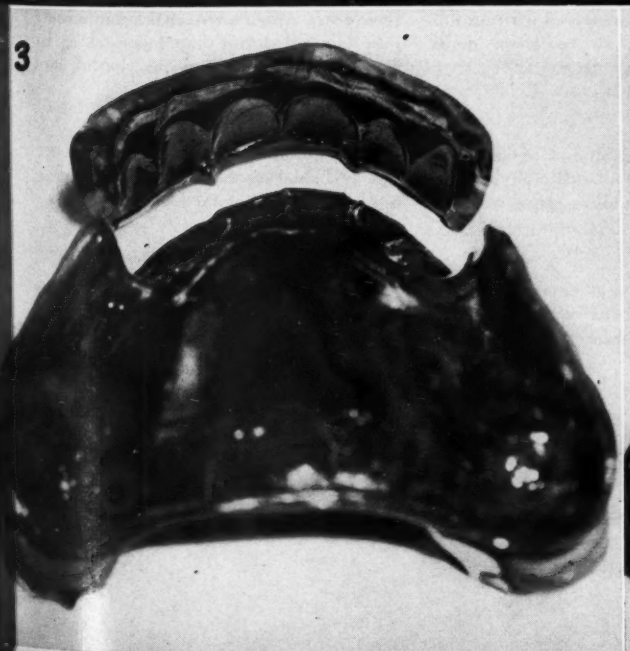
Many techniques have been advanced for "temporary," or treatment dentures, and most of these seem to

answer the requirements. The actual mechanical construction of the dentures has been described in many fine articles, but the technique of impressions has been for the most part neglected.

## Technique

The technique outlined here has been used for the last four years with gratifying results. The impression is

\*Photography: Mr. Ernest H. Heusser, Los Angeles. Courtesy of Norman Taurog and Universal Pictures Corporation.



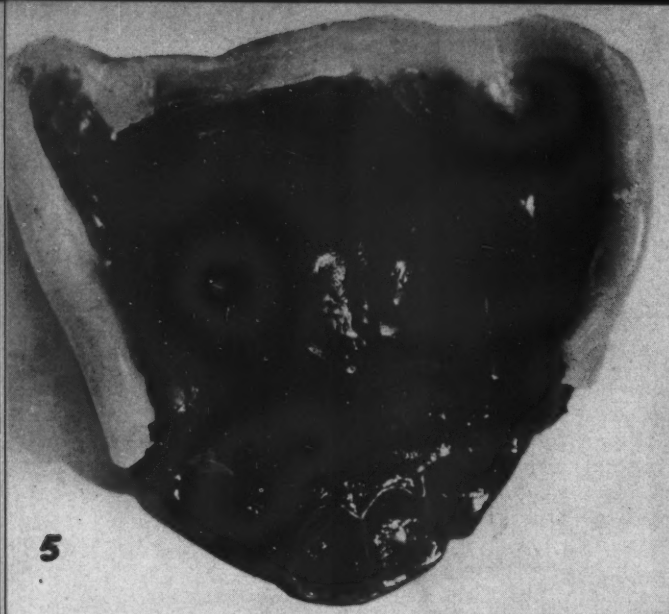


Fig. 1—Primary impression. Note marking of post-dam area which will be the distal extension of tray.

Fig. 2—Master model and permanent record.

Fig. 3—Two-section tray. Note notches on labial section to facilitate accurate fitting of final impression sections.

Fig. 4—Two-section tray showing palatal section in place on model. This also shows

compound bite blocks covered with tin foil, enabling impression to be taken under biting stress.

Fig. 5—Wax applied around periphery to obtain a tight seal. Wax is carefully muscle-trimmed while under biting stress.

Fig. 6—Finished palatal impression. Note areas where pink wax shows through, indicating the accurate compression in

these areas. Also impression is automatically post-dammed during impression-taking by a correct compression at junction of hard and soft palates.

Fig. 7—Labial section taken in plaster prior to waxing to the palatal section.

Fig. 8—Completed, muscle-trimmed impression. Note that the post-dam is completed with the impression.

taken under biting stress which insures a more accurate immediate denture.

1. The posterior teeth are extracted, and after partial healing a full mouth impression is taken with elastic impression material. From this a master model is run to serve as a permanent record of the case (Figs. 1 and 2).

2. Another model is made from the master model and a two-section vulcanite tray constructed. The palatal section of the tray covers the palate and posterior ridge to within about 3 mm. of the tissue reflection, and the lingual of the anterior teeth up to the incisal edges. The second, or labial, section is made to cover the labial of the anterior teeth up to about 3 mm. of the tissue reflection, and to fit against the palatal section when they are both placed on the master model. A small handle is added to this second part to facilitate the handling (Fig. 3).

3. The tray is tried in the mouth and trimmed to allow freedom of muscle movement. The vulcanite tray is then serrated over the ridge area and compound bite blocks are added. These are softened, the tray is returned to the mouth and the patient is instructed to close until the anterior teeth touch in the correct relation. The compound is chilled, trimmed, and removed from the mouth. A coating of one of the zinc oxide base

impression materials is placed on the bite blocks; tin foil is placed over it and returned to the mouth. The purpose of this is to get an accurate evenly distributed pressure when taking the final impression under biting stress (Fig. 4).

4. A pink wax which stays pliable at mouth temperature, but quickly hardens on chilling, is placed around the entire periphery, except the anterior portion, and returned to the mouth. The patient is instructed to close, suck, and swallow. Routine muscle-trimming is carried out, and if this is done carefully, a good tight peripheral seal will result along with a well muscle-trimmed denture (Fig. 5).

5. A coating of the impression material is then added to the inside of the tray, and returned to the mouth. The final impression is taken under biting stress (Fig. 6).

6. When the operator is assured that he has an accurate impression of the ridge-palatal area with a tight seal around the periphery the labial section may be taken. The impression is returned to the mouth and the patient closes firmly. A fast-setting plaster is mixed, placed in the labial section of the tray, and placed in the mouth, being forced firmly against the teeth. With the free hand the lip is pulled out and down to obtain an accurate muscle-trim in that area.

When the plaster is hardened the labial section is withdrawn, and then the palatal section. They are fitted and waxed together and a complete, well muscle-trimmed impression should be the result (Figs. 7 and 8).

7. In some cases dentures made with this technique have been worn by patients for many months. When it is time for another denture a new wash is taken in the old denture, a transfer made, and the patient has a new, perfectly-fitting denture without going to the trouble and expense of an entirely new denture.

#### Advantages of Technique

1. The impression is taken under biting stress, which results in an impression of the tissue compressed as it will be when the denture is seated.

2. An accurate muscle-trimming may be done.

3. Compression of the periphery and post-dam area is just enough to obtain a perfect seal without tissue soreness.

4. The operator has both hands free to take the impression of the labial section and to muscle-trim.

5. Any discrepancies in the impression can be corrected by adding a little material to that area and re-seating in the mouth.

5514 Wilshire Boulevard.

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## A LONG DISTANCE AND LOW PENETRATION TECHNIQUE FOR DENTAL X-RAY UNITS

(Continued from page 118)

has a yellow label on it calling attention that the speed of the film has been increased 100 per cent) is an excellent film to use, although any of the standard brands of equal speed, used in medical roentgenography will do. Size 8 by 10 is easiest to handle. The film is first cut on the trimmer

into strips a fraction larger than the size of the die. With the  $\frac{7}{8}$  by 2 die, for example, the strips are cut  $2\frac{1}{4}$  inches wide by 10 inches long. The die is then used to stamp out the films from the strips. After this the films are wrapped in black paper and then in white paraffin paper.

All the roentgenograms shown in this article were taken on the Ritter Model B. Dental X-Ray Unit. The same results can be obtained with the Weber Dental X-Ray Unit and the C. D. X. Dental X-Ray Unit by making the same K. V. P. change.

450 Sutter Street.



## EAST IS EAST



A TEMPLE ENTRANCE  
Langsit, Bali

Photo by H. C. Ostrander

BALINESE VILLAGE BEAUTY

Photo by Ide Bagoes Djego

THOSE WHO SEEK the romance and mystery of the Far East have only to visit Java, Sumatra, Bali and other sun-kissed Isles of Netherlands India. Here they will find jungle villages, strangely carved temples, weird music, quaint market places, luscious fruits, People—all seem to move slowly out of the forgotten into the unknown.

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### NOTES ON THE

## Cuff

Jan. 21—The dental literature is chock-full of stories of success. Many dentists write as if they were preparing autobiographies for the *American Magazine*, as they tell the story of their uninterrupted successes. An editor sits expectantly, with his eye shade adjusted for immediate use, to find some dental manuscript some time which describes a series of failures. Some day I hope to find a dentist who tells why all his lower dentures fail; why his orthodontic cases return to malocclusion after treatment; how his pulp canal therapy is unsuccessful; how all his patients with pyorrhea eventually lose their teeth. The medical literature is more objective in this regard. Physicians and surgeons seem to be courageous enough to report their cases of death following significant forms of medical and surgical therapy.

I have yet to hear a clinician before a dental group recount in scientific frankness the many failures he has had in dental practice. I should like to be in the front row if ever such a clinician or lecturer is announced.

Jan. 24—A. Laurence Dunn of Santa Barbara, California has an excellent picture published in *Life*, "Dental Detail." Doctor Dunn's illustrations for the article by E. D. Shooshan on MODIFIED FIXED BRIDGEWORK in the Decem-

## Special Notice

A new deluxe *Dental Digest* binder is available to readers at a new and lower price, effective March 10.

ber, 1936, issue of **THE DENTAL DIGEST** are among the best photographs in the dental literature.

*Jan. 27*—While driving through the snow banks on the way to Battle Creek to speak before the Southwestern Michigan Dental Society, the traveler is surprised at the extent of the vineyards and orchards in southwestern Michigan, even as they are seen in winter. Although clustered in one city are three manufacturers of cereals and grain foods, the people of the community show no signs of dietary imbalance.

*Jan. 29*—Three recent events show the value of adequate dental records for identification purposes: The body of Charles S. Ross, the kidnap victim, was identified by his dentist; some of the bodies of the children in the St. Hyacinthe, Quebec fire and some of the people lost in the Montana airplane crack-up were similarly identified.

*Feb. 3*—Most people who write anonymous letters will put chewing gum on your seat in the movie; poison your dog when you are away on your vacation; and save the poppy from one Armistice Day to another. To spill one's fault-finding or tattle-tale logorrhea from behind a mask of anonymity is one of the cowardly methods that journalists expect. There are, however, a few special instances in which anonymity has its place: the relating of poignant personal experiences, in which the facts and implications are of human interest but in which the identity of the author is of no concern to the reader. Comment on such a case is made on The Editor's Page of this issue.

*Feb. 7*—George G. Philippos tells me

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at the meeting of the Odontographic Society about his use of **THE DENTAL DIGEST** colored Patient Education Charts in addressing a group of laymen in Athens, Greece.

Feb. 11—Accompany Inspector W. H. Drain Lester of the Federal Bureau of Investigation to hear him talk before the Chamber of Commerce of Sycamore, Illinois. Inspector Lester points out some striking facts on the crime scourge: that the crime bill is 15 billion dollars annually which amounts to \$500 per year, per family; that native white Americans were arrested 200 per cent more frequently than foreign-born in 1936; that one out of every six persons arrested in 1936 was of high school age; that there were five times as many banks plundered by bankers as by bank robbers; that the tentacles of a gang extend through physicians, lawyers, and women, as well as the criminals themselves; nine of the actual Dillinger gang are dead whereas twenty-two accomplices of this gang are in prison. Inspector Lester also points out that although finger-printing was known to the Chinese 2400 years ago, it has been used successfully only in comparatively recent years. The masterly work of the Federal Bureau of Investigation is conducted by only 683 special agents, operating from forty-seven field offices in the United States. Eighty-four per cent of these agents are college graduates. Their record for convictions in 1937 was 95 per cent.

Feb. 12—Ended the period of training and ready to begin the hard siege of the Chicago Midwinter Meeting.

Feb. 13—Surgeon General Reynolds of the U. S. Army, speaking before the International College of Dentists, describes the progress made in dentistry in the last thirty-five years, from contract practice to full rank and parity with medicine, with a Brigadier-General now the head of the Dental Corps. General Reynolds indicates that it took medicine 100 years to make the same progress.

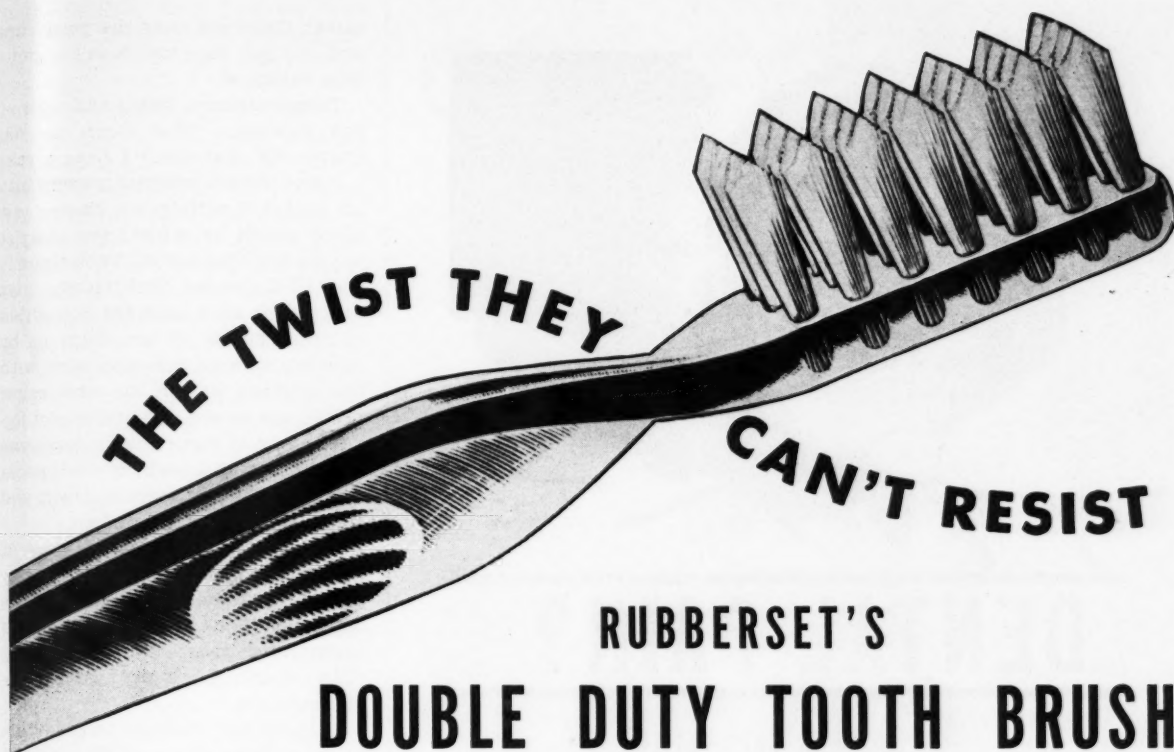
**Day-By-Day Account: C.D.S.**

Feb. 14—Monday—Noon: At the luncheon for the past-presidents of the Chicago Dental Society. Jack La Due presiding, tells the story of the dentist who continued to use modeling compound again and again until the onion taste became objectionable to his patients.

Afternoon: Table Clinics, always the

(Continued on page 126)





## RUBBERSET'S DOUBLE DUTY TOOTH BRUSH



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same: Can't get near the good ones and the bad ones aren't worth stopping to look at.

Things strange, heard and seen at the meeting: "How much do you charge for that case? I have a case..." And the interrogator plunges into his pocket to withdraw a plaster cast about which he expects the essayist to give him free advice. Then there is the self-appointed clinician who tries to steal the show from the accredited clinician either by argument or by carrying on a private discussion with the clinician, so that the other eager people are frozen out of the picture.

Ted Rost of Bloomington expresses the pungent philosophy of the Lincoln country: "Don't charge so much and you won't lose so much."

Herbert Ely Williams, the Sage of Redbank, dislikes particularly essayists who swallow the last word of the sentence. His is the expression (preparatory to insertion of gold foil), "The mouth is as dry as a step-mother's kiss."

A feverish dentist rushes up, "Are you from Chicago? Where can I have a cuspidor repaired?"

Monday Night: Congressman Pettengill of Indiana addresses the General Session: "The laboratories have done more for mankind than the legislatures. In the professions nearly every improvement can be traced back to the individual rather than the organization. Louis Pasteur did not emerge from a government bureau. When we regiment personality we shackle prosperity. Man must be free if men progress." With this, there is agreement.

Mr. Pettengill, however, chose his analogy a bit unwisely when he suggested that the way to protect ourselves against government bureaucracy and state medicine was to follow the protective organization of the bison who surrounded the herd with the stronger members to protect the weaker from the attacks of the white man. That animal is now virtually extinct.

Mr. Pettengill's syllogisms would not give him a passing grade in a course in logic. Example: "Washington has a large incidence of crime. Washington is controlled by the federal government. Therefore, anything that the federal government undertakes will result in mismanagement. Should the government enter into health care, it will be mismanaged."

If this is true, then Congress is at fault; Mr. Pettengill is a Congressman; therefore, the conclusion should be evident.

Feb. 15—Tuesday—Vol. 1, Number 1, of the first issue of the newspaper published by the Chicago Dental Society is at each door of the hotel. Harold Hillenbrand and his corps of editors worked through the night preparing copy and have done an excellent job.

The Scientific Sections begin their programs.

Walter Briggs of Attleboro, Massachusetts, chides dentists who refuse to correct beginning caries in teeth of children referred to them by school dentists.

Along toward evening Ralph Edwards of Kansas City, Missouri, in an expansive mood, whittles down the editors of this magazine for some of their ambiguous headline writing. It is always a delight to know that readers check us with care and accuracy.

Feb. 16 — Wednesday — Morning: Herman Chor of the Neurology Department of Northwestern University Medical School discusses pain of the head and face in association with temporomandibular joint disturbance. The time had come for someone to debunk the temporomandibular joint enthusiasts whose numbers almost amount to a cult; who would reposition the condylar head to correct all manner of pains in the head. Changes in the mandibular joint are occasionally dolorogenic but not every earache, attack of dizziness, neuralgia, or neuritis is of this origin. Before too many bites are rebuilt, it might be well to consider all the other neurologic and otologic mechanisms in the head and face.

Wednesday Evening: Supper Dance, a new and popular kind of party: no speakers' table; no speeches; no stiff backs—a social formula for entertainment chairmen to remember.

Feb. 17—Thursday—Morning: On the program of the Economics Section. During the discussion following, W. N. Miller of Flint, Michigan makes a pertinent observation regarding attendance at meetings: "Perhaps more good could be done for the profession if the dentists who habitually attend dental meetings stayed at home to take care of their practices and sent the boys who never leave the home town up to the convention to help them keep abreast."

Feb. 18—Friday—Morning: In the

# COMFORT...

## even in the tiniest mouth



Below—No. 0 radiographs; 2 adult at left; 3 child at right.

**SITUATIONS** are constantly encountered in periapical radiography when the use of *regular-size* films—even the most comfortable of all, Eastman *Radia-Tized*—causes problems in placement and securing undistorted images. The patients include children, whose mouths are naturally small... and the many adults who present narrow dental arches or abnormal anatomical structures. Such cases require No. 0 Eastman *Radia-Tized* Films.

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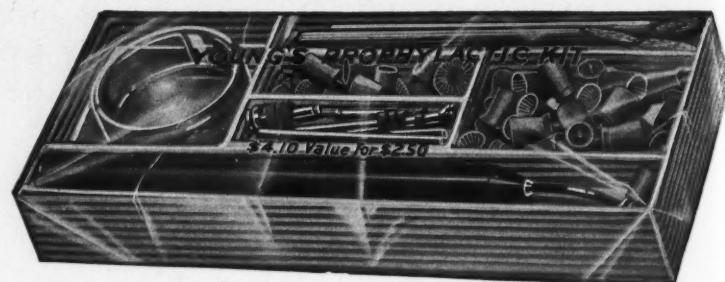
## Dr. Kelly's Impression Paste for Correct Adaptation

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36 assorted Polishers . . . . .	1.80
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12 Prophylaxis Sticks . . . . .	.05
<b>TOTAL VALUE</b>	<b>\$4.10</b>
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too human atmosphere of the ball-room (it wasn't the humidity; it was the humanity) the Section on Operative Dentistry presents a program on bread and butter dentistry. Although interest in things scientific and medical is constantly increasing among dentists, the interest and emphasis is still largely on the practical affairs of clinical practice. As one sardonic observer pointed out following a pompous paper by President Raymond Kent of the University of Louisville, "Inlays can't be made by logarithms; it doesn't help much to read Aristotle in the original when confronted with an obstinate extraction."

Red eyes; white faces; weary salutes; husky voices. The toll of the meeting: cases of Scotch consumed; sleep lost; hail fellows well spent.—E. J. R.

Banquet April 4 and 5, 1747 West Harrison Street, Chicago. John C. McGuire, Pres., Emil Anderson, Sec'y.

Pennsylvania State Dental Society, seventieth annual meeting, Benjamin Franklin Hotel, Philadelphia, May 3-5.

Indiana State Dental Association, eighty-first annual meeting, Claypool Hotel, Indianapolis, May 16-18.

American Dental Society of Europe, Stockholm, Sweden, August 1-3, 1938.

A committee composed of members of the Class of 1908 of the New York College of Dentistry, New York University, met at a luncheon at the Hotel Pennsylvania, December 9. Plans were formulated to hold a reunion to celebrate the thirtieth anniversary of the class, sometime during March.

St. Louis University Dental Alumni Association, eighth annual reunion, March 23-24. St. Apollonia plaque will be awarded.

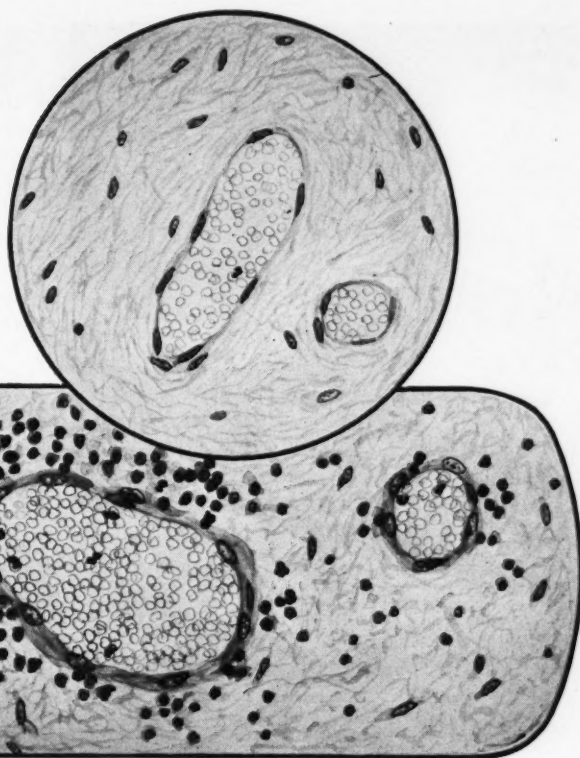
American Society for the Advancement of General Anesthesia in Dentistry, next regular meeting, Monday evening, March 28, at Hotel Belmont Plaza, New York city.

## DENTAL MEETING

# Dates

Chicago College of Dental Surgery, Dental Department of Loyola University, Alumni Homecoming, Clinic, and

Normal blood vessels



Blood vessels showing congestion and surrounding inflammation.



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#### THE DENTAL DIGEST

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The State Board of Registration and Examination in Dentistry of New Jersey will hold its annual examinations, commencing June 27, and continuing for five days thereafter. Complete details can be secured from Walter A. Wilson, D.D.S., 148 West State Street, Trenton.

American Association of Orthodontists, thirty-sixth annual meeting, Roosevelt Hotel, Los Angeles, California, July 11-14.

American Dental Association, annual meeting, St. Louis, Missouri, October 24-28.

American Academy of Restorative Dentistry, St. Louis, Missouri, October 22-23.

Kansas State Dental Society, annual meeting, Wichita, April 24-27.

Wisconsin State Dental Society, annual meeting, Milwaukee, April 25-28.

Missouri State Dental Society, annual meeting, Columbia, May 8-9.

New York State Dental Society, annual meeting, Syracuse, May 10-13.

North Carolina State Dental Society, annual meeting, Winston-Salem, May 2-4.

South Dakota State Dental Society, annual meeting, Watertown, May 23-24.

Tennessee State Dental Society, annual meeting, Chattanooga, May 9-12.

Colorado State Dental Society, annual meeting, Estes Park, June 20-22.

American Society for the Advancement of General Anesthesia in Dentistry, New York City, Fourth Monday in March and October.

District of Columbia Dental Society, United States Public Health Service Auditorium, Washington, D. C., second and fourth Tuesday in each month from October to June.



# *The* RUBBER-AND-SPONGE ANALOGY

*it helps patients visualize the problem  
of spongy Alveolar Tissues*

Inasmuch as the average denture patient readily comprehends the difference in pressure reaction between a piece of solid rubber and a sponge, the rubber-and-sponge analogy here reproduced proves useful in making understandable to the lay mind the similar difference—with respect to denture stability—between a normal alveolar process and a flabby, yielding one.

Using this analogy as a springboard, you prepare the patient's mind for a readier appreciation that spongy, yielding ridges cannot be expected to offer the normal resistance to masticatory stress that healthy, unyielding ridges afford.

*The Rubber-and-Sponge Analogy Is  
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## THE PUBLISHER'S

# Notebook

MANY IN THE dental profession are currently interested in identification by means of the teeth. *Oral Hygiene* has dealt with the subject at various times, as have other dental magazines. Not infrequently dental publishers receive requests from police departments to publish items describing the teeth of unidentified corpses in the hope that some dentist may, from the description, recognize a former patient. Last month, *THE DENTAL DIGEST*'s editor contributed an article on identification by means of the teeth to *Scientific American* magazine.

But identification by the teeth is by no means a new or even a recent development. It was practiced as long ago as 1758, according to *DENTAL JURISPRUDENCE FOR DENTISTS AND LAWYERS*, by Doctor William Rehfuss, published in 1892. Here is an interesting extract from Doctor Rehfuss's book:

### IDENTIFICATION BY MEANS OF THE TEETH.

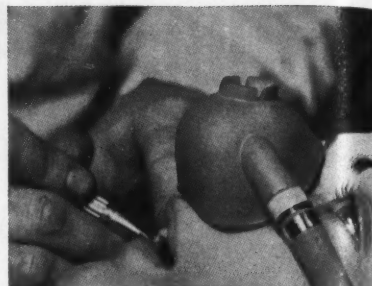
This is one of the most important subjects for the careful consideration of dental experts.

All modes of identification have their disadvantages and defects, but the dental test least of all. Frequently the absolute identification of a person, whether living or dead, is a difficult matter.

Cases are recorded where criminals have been identified by means of certain peculiarities of their teeth after all other methods of positive identification have failed. Again, persons accused of murder and other crimes, have established their innocence, by proving that their own physical peculiarities and characteristics differed from the published description of the supposed criminal, especially in cases where peculiarities of the teeth were considered reliable means of identification in the published description of the criminal.

It is often impossible to identify a corpse, even if no part of the body is missing, and in cases where mutilation has occurred (as usually in premeditated crimes, accidents, etc.) the difficulties are increased, and no test is more valuable than that afforded by dental jurisprudence.

When the identity of a corpse is sus-



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Safety is triply insured by the Easor emergency oxygen button, the safety valve on the dosage control, and by the improved air port in the nasal hood.

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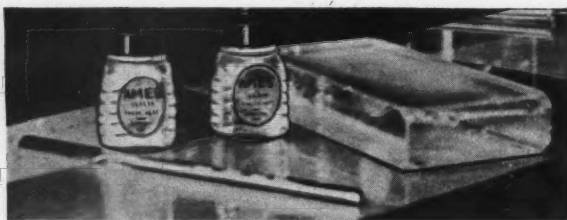
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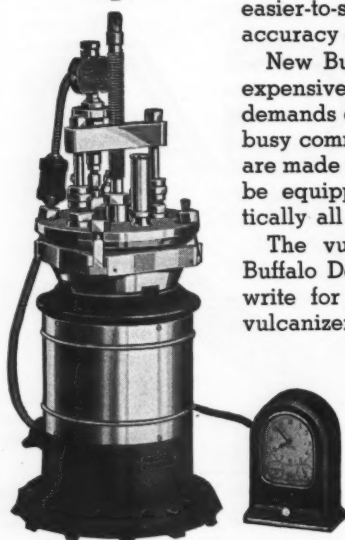
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pected, and a doubt exists, especially as the clothing, hair, hands, ears, etc., afford no positive clue or proof, the dentist of the person whom the deceased is supposed to be, is summoned to examine the teeth and mouth of the said deceased and therefrom testify, whether or not the peculiarities, etc., of the teeth are similar to those of his former patient, and thus establish identity or non-identity. He has available many and diverse means for positive identification; as the presence or absence of teeth; the condition of the alveolar processes; the presence of dentures; fillings or mechanical dentures and contrivances; irregularities in the arrangement of the teeth; state of decay, and many other peculiarities.

Dr. Guy states that a doubtful case of identity in Edinburgh was decided by a dentist, who produced a cast of the gums, which he had taken before death.

So, also, the remains of the Marchioness of Salisbury, discovered among the ruins of the Hatfield house, were identified by the jaw-bone having gold appendages for artificial teeth.

In Mr. Sargent's late history of Braddock's expedition is narrated a very interesting instance of identification by means of an artificial tooth.

Sir Peter Halket, in 1758, after the reduction of Fort Duquesne, proceeded to the spot of Braddock's defeat for the purpose of discovering, if possible, the remains of his father, who was there killed. "In reply to his anxious questions," we are told "one of the tawny guides had already told Halket that he recollected during the combat, to have seen an officer fall beneath such a remarkable tree as he should have no difficulty in recognizing; and at the same moment, another, rushing to his side, was instantly shot down, and fell across his comrade's body. As they drew near the spot, the detachment was halted, and the Indians peered about through the trees to recall their memories of the scene. With speaking gesture, they briefly discoursed in their own tongue. Suddenly, and with a shrill cry, the Indian of whom we have spoken, sprang to the well-remembered tree. While the troops rested on their arms in a circle around, he and his companions searched among the thick fallen leaves. In a moment, two great skeletons were exposed, lying together, the one upon the other, as they had died. The hand that tore away their scalps had not disturbed their position; but no sign remained to distinguish the relics from the hundred others that strewed the ground. At the moment Sir Peter remembered him of a peculiar artificial tooth which his father bore. The bones were then separated, and an examination of those which lay undermost at once solved all doubts.

"It is my father!" exclaimed the unhappy youth, as he sunk into the arms of his scarce less afflicted friends."